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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Gwan-hyeob Koh et al.

Group Art Unit: 2811

Serial No.: 09/891,905

Examiner: Samuel A. Gebremariam

Filed: June 26, 2001

For: METHODS OF FORMING INTEGRATED CIRCUITS USING MASKS TO  
PROVIDE ION IMPLANTATION SHIELDING TO PORTIONS OF A  
SUBSTRATE ADJACENT TO AN ISOLATION REGION THEREIN

July 8, 2002

BOX NON-FEE AMENDMENT

Commissioner for Patents

Washington, DC 20231

AMENDMENT

Sir:

This Amendment is responsive to the Official Action of April 12, 2002. The claims have been amended herein using the rewritten claims format. The present amendment also includes a section entitled "**VERSION WITH MARKINGS TO SHOW CHANGES MADE**" attached hereto.

In the Specification:

Please replace the paragraphs beginning on page 7, line 13 and ending on page 8, line 7 with the following rewritten paragraphs:

During channel ion-implantation, boron ions were implanted into a portion over which a gate electrode would be formed and into a portion where a source/drain region connected to a bit line contact would be formed in an active region at a dose of about  $1.0E13/cm^2$  and with ion-implantation energy of about 30KeV in a first local ion-implantation step. Then boron difluoride ions were implanted into the portion over which the gate electrode would be formed and the portion where the source/drain region connected to the bit line contact would be formed in the active region at a dose of about  $1.2E13/cm^2$  and with ion-implantation energy of about 30KeV in a second local ion-implantation process. This case is represented by -O- in the graph of FIG. 9. In another case, dual channel ion-implantation was performed under the same conditions as the above case, but channel ion-implantation was performed on an entire



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